acquired recording/playback conditions are always contained in the drive information.

Furthermore, in a multilayer disc according to the present invention the area of one layer overlapping the drive information area in another layer is left unrecorded, thereby assuring that the drive information can always be read under stable conditions.

The present invention is based on the previously filed Japanese Patent Applications 2002-192192 and 2002-310094, the content of which is hereby incorporated by reference.

Although the present invention has been described in connection with the preferred embodiments thereof with reference to the accompanying drawings, it is to be noted that various changes and modifications will be apparent to those skilled in the art. Such changes and modifications are to be understood as included within the scope of the present invention as defined by the appended claims, unless they depart therefrom.

What is claimed is:

1.   An optical disc comprising a data recording area for recording data, and a drive information area for recording drive-specific information, wherein:

the drive information area comprises a plurality of clusters;

each cluster comprises a plurality of sectors;

each sector has capacity for storing one record of drive-specific information; and

the plural records of drive-specific information are arranged in the order in which the records were recorded with the last-recorded drive-specific information record located first in the read sequence.

2.   An optical disc as described in claim 1, wherein:

new drive-specific information is stored to the first sector in a new cluster, and information from all sectors except the last sector in the immediately preceding cluster is stored to the remaining sectors following the first sector in the new cluster.

3.   An optical disc as described in claim 1, wherein:
        the drive-specific information includes at least: a manufacturer identifier for identifying the manufacturer of the optical disc drive, a drive identifier such as a serial number of the optical disc drive, and recording/playback conditions including a required laser power level.

4.   An optical disc as described in claim 1, comprising at least a first recording layer and a second recording layer each read by a read beam incident thereto from the same side, wherein:
        a drive information area for recording drive-specific information is disposed to the first recording layer, and the area in the second recording layer at the same radial position as said drive information area is unrecorded.

5.   An optical disc as described in claim 1, wherein disc-specific information is recorded to one of the plurality of sectors in each cluster.

6.   An optical disc as described in claim 1, wherein the disc-specific information includes at least a last address where data is recorded in the data recording area.

7.   An optical disc drive for recording an optical disc having a data recording area for recording data, and a drive information area for recording drive-specific information, wherein the drive information area comprises a plurality of clusters, each cluster comprises a plurality of sectors, each sector has capacity for storing one record of drive-specific information, and the plural records of drive-specific information are arranged in the order in which the records were recorded with the last-recorded drive-specific information record located first in the read sequence, said optical disc drive comprising:
        a detection device for detecting if an optical disc was loaded;

a drive device for reading and writing the optical disc;

memory for storing at least a manufacturer identifier for identifying the manufacturer of the optical disc drive, a drive identifier such as a serial number of the optical disc drive, and recording/playback conditions including a required laser power level; and

a controller for controlling the drive device;

wherein the drive device is controlled by the controller, and when an optical disc is loaded accesses the drive-specific information,

detects the first unrecorded cluster,

reads the last-recorded cluster immediately preceding the first unrecorded cluster, and

sets the write power level based on the drive-specific information in the last-recorded cluster.

8.   An optical disc drive as described in claim 7, wherein setting the write power level based on the drive-specific information in the last-recorded cluster determines whether drive-specific information storing the same drive identifier as the drive identifier of the optical disc drive is contained in the last-recorded cluster, and

if drive-specific information storing the same drive identifier is detected, sets the write power level based on that drive-specific information, but

if drive-specific information storing the same drive identifier is not detected, sets a new write power level by a new learning process and generates new drive-specific information, and

stores the new drive-specific information to the first sector in a new cluster, and stores information from all sectors except the last sector in the immediately preceding cluster to the remaining sectors following the first sector in the new cluster.

9.   An optical disc recording method for recording an optical disc having a data recording area for recording

data, and a drive information area for recording drive-specific information, wherein the drive information area comprises a plurality of clusters, each cluster comprises a plurality of sectors, each sector has capacity for storing one record of drive-specific information, and the plural records of drive-specific information are arranged in the order in which the records were recorded with the last-recorded drive-specific information record located first in the read sequence, said optical disc recording method comprising steps of:

　　　detecting if an optical disc was loaded;

　　　accessing the drive information area when an optical disc is loaded;

　　　detecting the first unrecorded cluster;

　　　reading the last-recorded cluster immediately preceding the first unrecorded cluster; and

　　　setting the write power level based on the drive-specific information in the last-recorded cluster.

10. An optical disc recording method as described in claim 9, wherein setting the write power level based on the drive-specific information in the last-recorded cluster determines whether drive-specific information storing the same drive identifier as the drive identifier of the optical disc drive is contained in the last-recorded cluster, and

　　　　if drive-specific information storing the same drive identifier is detected, sets the write power level based on that drive-specific information, but

　　　　if drive-specific information storing the same drive identifier is not detected, sets a new write power level by a new learning process and generates new drive-specific information, and

　　　　　stores the new drive-specific information to the first sector in a new cluster, and stores information from all sectors except the last sector in the immediately preceding cluster to the remaining sectors following the first sector in the new cluster.